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(54) **Nonvolatile storage with high speed data access**

(57) A non-volatile storage that is composed of a plurality of flash memory chips further comprises:

a cache memory having a plurality of entries each storing a data block corresponding to data in the flash memory, a write bit for indicating a write to said data and an erase bit for indicating that data in the flash memory has been erased.

selections means for selecting a data block in a flash memory chip other than a chip to be accessed by a host

and corresponding to a cache data block whose write bit is set and whose erase bit is not set,

and erase means for erasing the selected data block.

The non-volatile storage of the present invention has realized high speed data access by reducing the wait time to be spent to start a data rewriting operation after the completion of the erasing operation. The non-volatile storage has further realized improved efficiency of data erasing operations that are not concentrated in time.

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## EUROPEAN SEARCH REPORT

Application Number  
EP 94 30 7645

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P,X	EP-A-0 619 541 (HITACHI LTD.) 12 October 1994	1	G06F12/08 G11C16/06
A	* page 39, line 18 - page 40, line 44; figures 93,94 *	2,4,6, 14,20	
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A	EP-A-0 392 895 (SUNDISK CORP) 17 October 1990	1-25	
	* column 2, line 10 - line 40 *		
	* column 3, line 8 - line 20 *		
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A	COMPUTER TECHNOLOGY REVIEW, vol. 12, no. 7, 1 June 1992 pages 36-37, XP 000282679 BONNER B 'FLASH MEMORY FOR TOP SPEEDS IN MOBILE COMPUTING APPLICATIONS' * page 37, left column *	1,14,20	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G06F G11C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		6 February 1996	Nielsen, O
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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